

Provisional
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2004 Interim Protocols For The Operation of The Environmental Water Account

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2004 Interim Protocols for the Operations of the Environmental Water Account

The following are interim protocols for operating the Environmental Water Account in 2004. These protocols, which provide clarification of specific EWA Operating Principles, may be modified or added to during the course of the year. Modifications to the protocols may be developed by the Project Agencies and the Management Agencies.

A. Storage

1) Article II. Section 2.e.i. Priority of EWA to Project Storage

The priority for storage space in upstream project reservoirs is as follows:

- SWP (from highest to lowest priority)
 - ✓ SWP Project Water
 - ✓ Water acquired for SWP users
 - ✓ EWA Water
- CVP (from highest to lowest priority)
 - ✓ CVP Project Water
 - ✓ Water acquired for CVP users
 - ✓ Refuge Level IV Water
 - ✓ EWA Water
 - ✓ Non-Project Water

The priority for storage space in San Luis Reservoir is as follows:

- SWP (from highest to lowest priority) (See Figure 1, page 4)
 - ✓ SWP Project Water
 - ✓ SWP contractor non-Project water when SWP has not allocated 100% of requested amount
 - ✓ EWA Water
 - ✓ Cross Valley Canal Contractors' Water
 - ✓ CVP encroachment, State Water Project contractor non-Project water when SWP has allocated 100% of requested amount, and Third Party water
- CVP (from highest to lowest priority) (See Figure 2, page 5)
 - ✓ CVP Project Water
 - ✓ Rescheduled Water
 - ✓ CVP Contractor Non-Project Water
 - ✓ Refuge Level IV Water
 - ✓ Cross Valley Canal Contractors' Water
 - ✓ EWA Water
 - ✓ SWP Encroachment and Non-CVP Water

The issue of the SWP using the CVP share of San Luis Reservoir is addressed in the second paragraph of Article II. Section 2.e.i., but is silent on the CVP using the SWP share of storage. The Project Agencies concur with the Management Agencies that the intent of this paragraph is to apply the same rules to the CVP as to the SWP. The following provides additional clarification on the priorities of EWA storage in San Luis Reservoir.

- The CVP can encroach into the SWP share of San Luis to the extent that such encroachment does not (1) impact the SWP operations or (2) cause the EWA to be spilled out of the SWP share of San Luis.
- The same rule applies for the SWP use of the CVP share of San Luis Reservoir.

An issue that has arisen is the availability of physical (actual) space due to an EWA debt in a Project's share of San Luis Reservoir and the potential for the other Project to encroach in that space. This space is to be used for the placement of water by the CVP or SWP on behalf of the EWA to either reduce or remove any or all debt; or to identify water with either a CVP or SWP label to compensate for a future curtailment; or by the EWA to benefit from an operational opportunity.

Another issue that has not been adequately addressed within the Operating Principles is the priority for moving water from San Luis Reservoir to avoid or minimize spilling EWA assets. The concern is that EWA water may be forced out of San Luis because the Projects are capable of filling the reservoir. The EWA may have a place to store the water (i.e. groundwater storage in Kern County), but will not have any way of conveying the water to the new storage location. To ensure this does not occur, DWR will provide 600 cfs of conveyance capacity to move EWA water from San Luis Reservoir to other storage facilities in the San Joaquin Valley through April 30. However, if an unexpected conveyance outage occurs that limits the amount of water that can be conveyed to meet SWP and EWA requirements, the capacity made available to the EWA would be prorated as:

$$EWA_{\text{pumping}} = (ACC) * (EWA_{\text{rp}}) / (TRP)$$

Where:

- ✓ ACC is the available conveyance capacity along the California Aqueduct.
- ✓ EWA_{rp} is the amount of pumping requested/needed for moving EWA water.
- ✓ TRP is the total amount of pumping desired to meet both SWP and EWA needs

2) Article II. Section 2.e.ii. Protocols or Standards For Storage, Spill, and Loss of EWA Water in Upstream Project Reservoirs

Flexibility of SWP operations to back off of upstream releases in whole or in part may be credited to EWA as an upstream asset for future use, however, EWA does not get credit against current curtailment.

Figure 1
SWP Portion of San Luis Reservoir
Storage Priorities for EWA Purposes

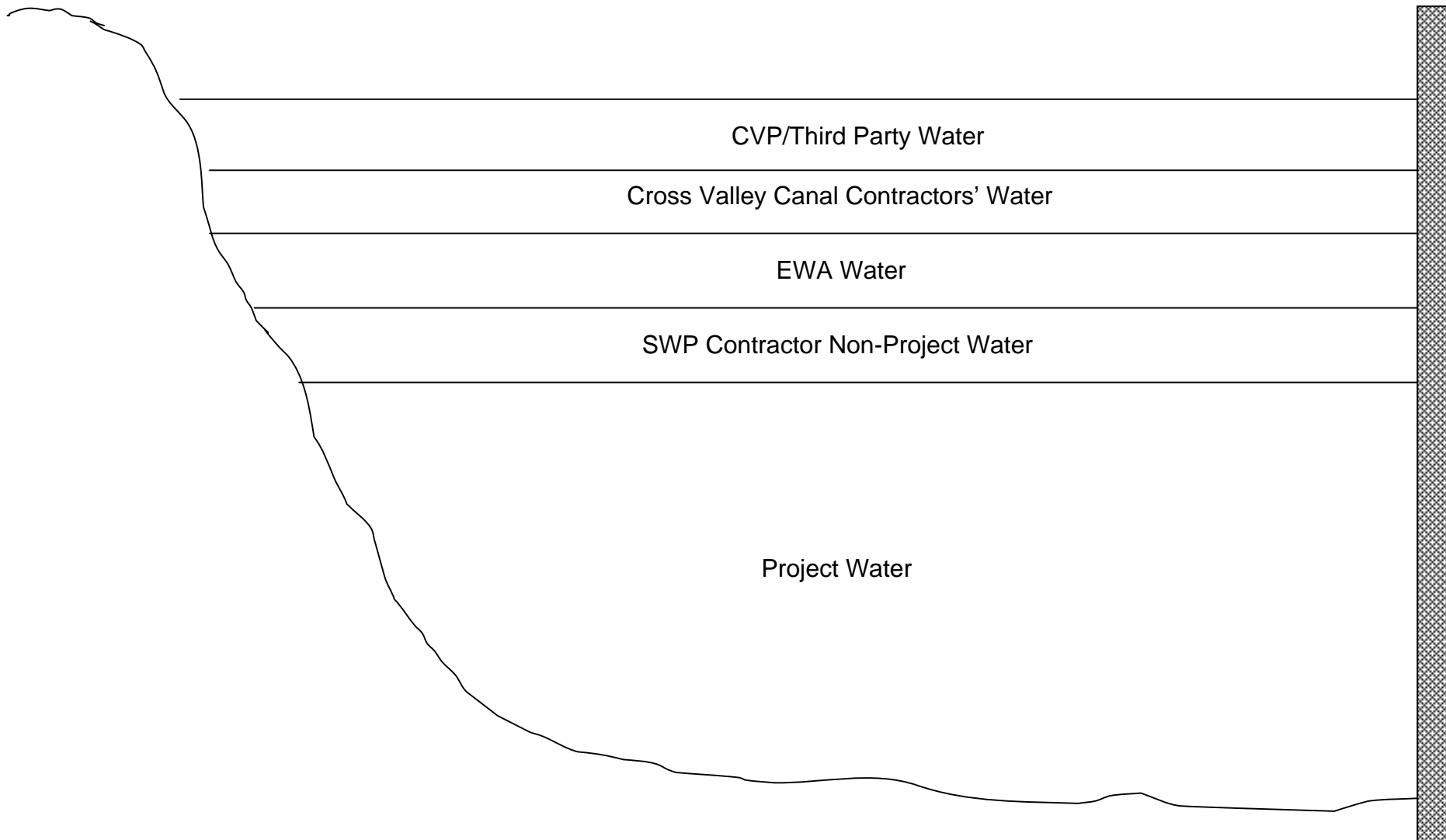
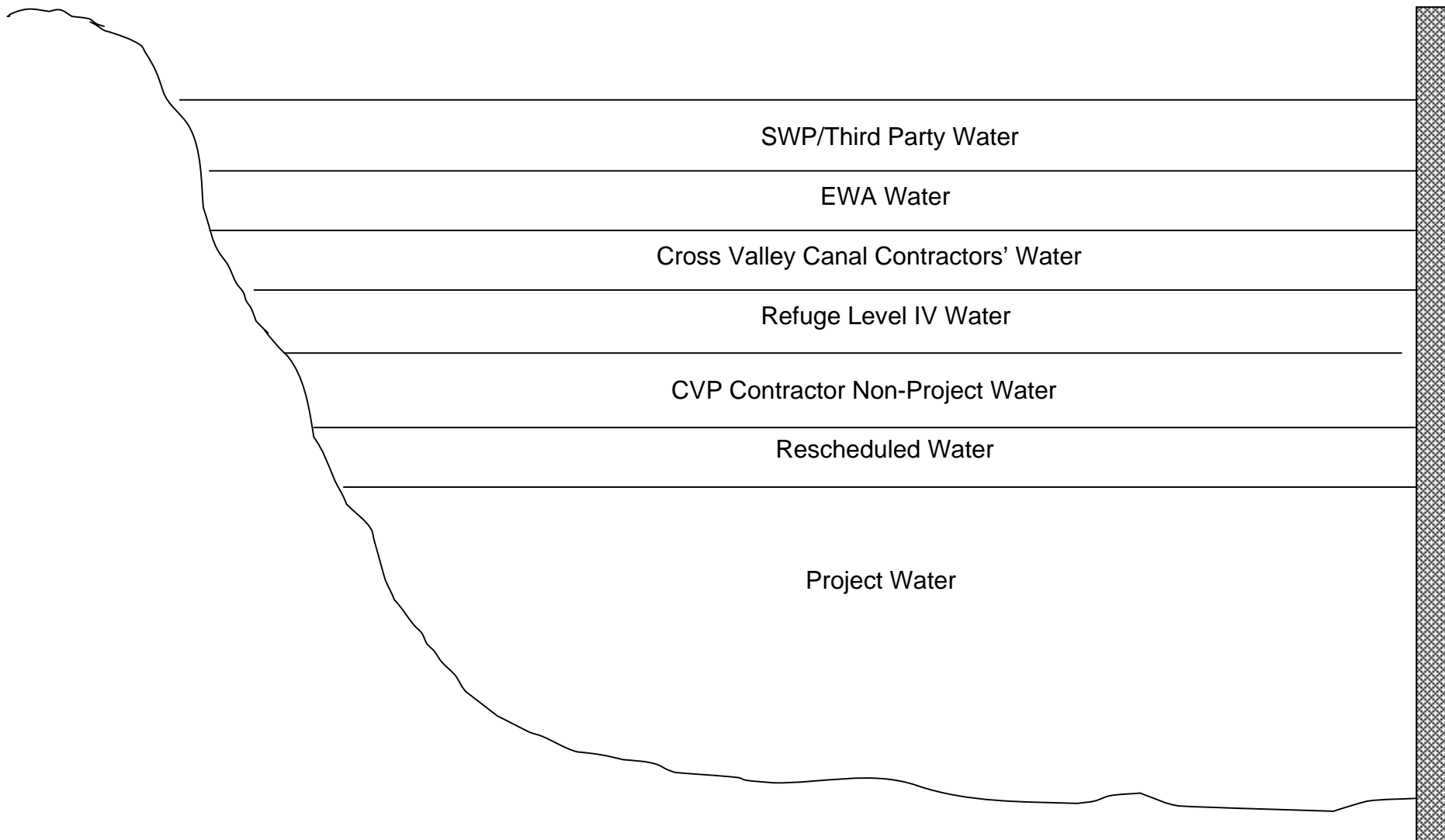


Figure 2
CVP Portion of San Luis Reservoir
Storage Priorities for EWA Purposes



B. Conveyance

1) Article II. Section 2.d. Use of Excess Capacity

When there is a competing need for excess Delta export capacity between the EWA and Level 4 Refuge water, the Management Agencies and the Project Agencies will consult to seek a schedule that balances the needs of both environmental programs.

2) Article II. Section 2.d.i. Excess Capacity

The term “project operational requirements and contract commitments” include (1) pumping water from the Delta by one project and placing the water into the other project’s share of San Luis Reservoir, and (2) the movement of Level 4 water during balanced conditions at CVP facilities (this applies to the CVP only). The Projects allow for each to encroach into the other’s share of San Luis Reservoir. This is permissible as long as it does not result in the “spill” of EWA water that is being stored in San Luis Reservoir.

3) Article III. Section 1.b.i. Sharing of b(2) and ERP water pumped by the SWP.

This section of the Operating Principles states that the SWP will share equally with the EWA any b(2) or ERP water that is pumped by the SWP which exceeds the export capacity of the CVP Tracy Pumping Plant. The Department agrees that one half of such water pumped by the SWP will be credited to the EWA and either (1) pumped into the SWP share of San Luis Reservoir or (2) convey to a storage facility elsewhere in the San Joaquin Valley. This sharing occurs when one of the following two conditions exist:

- a) The Delta is in balanced conditions with suspended COA accounting. Balanced conditions are declared through mutual agreement by DWR and Reclamation and are based on conditions when releases from upstream reservoirs plus unregulated flow approximately equal the water supply needed to meet Sacramento Valley in-basin uses, plus CVP and SWP exports.

The COA accounting is suspended due to the inability of the CVP to export its share of storage withdrawals and unstored water for export. This imbalance must be caused in part by b(2) or ERP upstream releases.

- b) Project exports are controlled by the Export/Inflow ratio. The release of upstream b(2) or ERP releases may result in an incremental increase in SWP exports most likely due to the inability of the CVP to capture the incremental increase at its export facilities.

4) Article III. Section 1.b.ii. Joint Point: SWP Wheeling of CVP and EWA water

The principles contained in this section of the Operating Principles regarding the split between the CVP and EWA for use of JPOD at Banks also applies to use of JPOD at the Tracy Pumping Plant for CVP wheeling of SWP and EWA water.

5) Article III. Section 1.b.iv.(A). Relaxation of the Section 10 Constraint.

Permission has been obtained from the Corps to increase the base diversion rate by the equivalent of 500 cfs to 7,180 cfs for the months of July, August, and September, through 2004. The purpose of this is to increase diversions into CCF for use by the SWP to recover export reductions made due to the Endangered Species Act (ESA) or other actions taken to benefit fishery resources. This 500 cfs will be dedicated in its entirety to pumping for the EWA. Permits and environmental documentation preclude the use of this asset for any other purpose.

6) Article III. Section 1.b.iv.(B). Relaxation of the Export/Inflow Ratio

This section of the Operating Principles adequately addresses flexing the E/I ratio for the EWA.

C. Pumping Priorities at the Export Facilities

This protocol clarifies the priorities for on/off peak pumping at each Project's export facility.

The priority for pumping is as follows:

- SWP (from highest to lowest priority)
 - ✓ SWP Pumping
 - ✓ Water Transfers for SWP Contractors
 - ✓ JPOD use for specific CVP Contractors
 - ✓ Wheeling for CVP and EWA
 - ✓ Water transfers for others
- CVP (from highest to lowest priority)
 - ✓ CVP Pumping
 - ✓ Water Transfers for CVP Contractors
 - ✓ Refuge Level IV
 - ✓ Cross Valley Canal
 - ✓ EWA
 - ✓ Water transfers for others

D. Borrowing

1) Article II. Section 2.c. Borrowing: No Reduction in Deliveries

The same principles that apply to the EWA borrowing Project water apply to the Project Agencies borrowing EWA water. Criteria for borrowing and payback will be provided in specific proposals submitted by the Project Agencies when they desire to borrow water from the EWA or Management Agencies when they desire to borrow water from the Projects. Proposals are to include (1) the quantity of water to be borrowed, (2) the term of the loan, and (3) specific criteria for repaying the water to the lender.

E. Energy and Facility Services for the EWA

1) Article II. Section 3. No Increased Costs

- Because EWA must have funds available to acquire needed power or pay for use of facilities as necessary for EWA operations, Reclamation and DWR will establish and maintain individual EWA accounts with adequate funding to compensate for CVP/SWP power and facility (includes capital and operations and maintenance associated with storage and conveyance) services provided to EWA. These accounts will be set up each year through September 30, 2004.
- Reclamation and DWR accounts for EWA will include funds for CVP/SWP power and facility services related to EWA operations. The funds for CVP/SWP power and facility services will be estimated in advance of EWA transactions and prior to approval by Reclamation and DWR. EWA funds from these accounts will be used to compensate Reclamation and DWR for CVP/SWP power and facility services rendered at the time of an EWA transaction.
- Exchanges of credits between Reclamation and DWR for CVP/SWP power and facility services will not be permitted.
- To maximize cost efficiency, an advance notice of 72 hours is necessary prior to any adjustment of project operations for EWA purposes.
- No retroactive reclassification of EWA operations will be permitted.
- For accounting purposes, it is assumed that EWA operations will occur in O'Neill Forebay,¹ unless otherwise agreed to by the EWA Project Agencies.

¹ Actual EWA transactions (purchases and deliveries) will occur throughout Northern/Central California. Those that impact Delta Export facilities will be reflected through accounting adjustments as though taking place in O'Neill Forebay.

- Calculation and accounting of EWA power costs will reflect the value of energy prices at the time the EWA transaction takes place.
- When EWA water crosses over between CVP and SWP facilities, the calculation and accounting of EWA facility costs for use of project facilities will reflect rates for non-project water at the time of the EWA transaction.

Energy

- Upstream Accounting - EWA will not accrue power credits through adjustments of upstream project operations for EWA purposes. EWA water will be treated in the same manner as any other water passing through upstream reservoirs and will not receive generation credit. EWA may however incur power costs for reductions in power generation resulting from bypassing flows around upstream generation facilities. Any requests for bypassing generation facilities will be evaluated on a case-by-case basis.
- EWA operations that increase pumping or reduce generation will be considered as increased power costs (debt) on the respective project account. EWA operations that increase generation or reduce pumping will be considered as reduced power costs (credit) on the respective project account. The amount of EWA increased or reduced power costs will be determined by calculation using power factors and the respective Reclamation or DWR "Power Value Index".
- Established power factors for facilities will be used where available. For facilities where an established power factor is unavailable, an estimate will be calculated by dividing the total daily power by the total daily water volume for that facility affected by the EWA operation. In the event there is no pumping or generation on a particular day for a facility, the power factor will be estimated using data from the preceding and succeeding days' pumping or generation. The EWA power will be estimated by multiplying the estimated increase or reduction of EWA water through a facility by the respective facility power factor.
- Reclamation and DWR power value indexes will be determined as follows.
 - A. Reclamation's "Power Value Index". The proposed Reclamation Power Value Index will vary based on an existing integration Contract that the Western Area Power Administration (WAPA) has with PG&E and the Spot Market. EWA pumping curtailment actions will be credited at the energy value recognized by the PG&E Contract. Because WAPA is typically always in a purchase mode from PG&E under terms of the Contract, a pump curtailment action therefore results in a reduction of the amount of energy purchased from PG&E. As WAPA is in the last 2 years of a 40-year contract, this value is typically lower than Spot Market purchases. Unfortunately, when purchasing energy for pumping EWA water, the PG&E Contract does not allow PG&E to provide the same lower cost energy. Therefore, WAPA must go to the Spot Market to

purchase energy and the value of energy at the time of purchase will be used as Reclamation's Power Value Index.

- B. DWR's "Power Value Index". The energy rates for any EWA operation that affects SWP pumping and/or generating facilities are based on a weighted average of the on-peak or off-peak daily SWP Contract, and Spot Market, Purchases and Sales. Any EWA operation that results in a change in both on- and off-peak project operations will be assessed at a weighted on- and off-peak energy rate in accordance with the extent of the EWA operation during each period.
- The increased or reduced power cost calculation will be based on the quantity of water involved, multiplied by the KWh/AF pumping factor (or KWh/AF generation factor for increased generation), multiplied by the appropriate Reclamation or DWR Power Value Index for each period of reduced or increased pumping or generation at the time of the EWA action.
 - The total amount will be reflected as a credit or debt and will be valued in dollars. The value will include cost adjustments and will be based on the Power Value Index used in the calculation. Such power costs (per KWh) will be further adjusted to include all applicable CAISO related costs (or agency succeeding CAISO) such as imbalance, reliability services, and grid management charges.
 - EWA will not receive any monetary compensation from Reclamation or DWR for reduced power costs resulting from EWA transactions at CVP/SWP facilities. Any power credit resulting from reduction of power use will be used as necessary to compensate Reclamation or DWR for future EWA transactions that result in increased power costs.

Facility Usage (Cost of Conveyance/Storage of Non-Project Water)

- EWA operations that increase the use of CVP or SWP project facilities will be considered as a cost to EWA. When EWA water is moved through either the CVP or SWP facilities and delivered to the respective project's contractors as project water, Reclamation and DWR will not assess EWA a service charge for use of project facilities. However, when EWA operations require additional services for storage, conveyance, and conveyance pumping under crossover situations between the CVP and SWP that result in an increased use of CVP/SWP project facilities, Reclamation and DWR will assess EWA and record a service charge or a "Use of Facility Fee."
- Facility costs will be determined by multiplying the total EWA water passing through CVP/SWP facilities by a "Use of Facility Fee". The EWA water will be adjusted to account for facility losses, as described in Section H. The facility costs for CVP/SWP services required by EWA will be maintained within Reclamation's and DWR's respective accounts.

- CVP "Use of Facility Fees"

For EWA's use of CVP facilities, two separate fees will apply: 1) Reclamation's "CVP Facility Use Fee" (includes project capital costs associated with storage, pumping, and conveyance, plus storage O&M where applicable), and 2) San Luis & Delta- Mendota Water Authority's (SLDMWA) "O&M Fee" associated with using the Tracy Pumping Plant the Delta Mendota Canal, and the CVP side of the San Luis Unit. Each fee will be accounted for separately. Reclamation will assess EWA the "CVP Facility Use Fee" and EWA will pay this fee to Reclamation. The SLDMWA will assess EWA the "O&M Fee," as appropriate depending on the facility used, and EWA will pay this fee to SLDMWA. EWA's payment of these fees to Reclamation and SLDMWA will be via contract agreements between Reclamation, DWR, and SLDMWA.

For EWA water stored in a CVP reservoir for more than 30 days, Reclamation will assess EWA its CVP Facility Use Fee for storing non-project water. In addition, for EWA water that results in a "spill" situation in a CVP reservoir, Reclamation will assess EWA the storage CVP Facility Use Fee for the remaining water that did not convert to project water.

- SWP "Use of Facility Fee"

The charge for using SWP facilities is calculated for each Reach of the SWP affected by EWA operations. Conveyance of EWA water is charged at the annual SWP Non-Project conveyance rate. This charge includes Capital Costs, Minimum Operation, Maintenance, Power, and Replacement, Variable Operation, Maintenance, and Replacement, Water System Revenue Bond Surcharge, Off-Aqueduct Facility, San Luis Reservoir Facility Use Fee, and Fish Replacement.

As EWA water is released to replace the SWP's previous export curtailment, the facility costs (debt) associated with moving that quantity of water in that projects' account will be removed from the account.

F. Release of Asset

1) Article II. Section 2.b.iii. Time of Release of Asset

Article II. Section 2.c.iv. Disencumber of Collateral or Release of Asset

In order to assure prompt release of assets to pay back borrowed water, and to assure that EWA will not have to pay unnecessary facility, conveyance and energy costs, the following procedures will take place by default unless Management and Project Agencies agree in advance to some alternative management of assets.

- If EWA has debt at the time of delivery, all water delivered to O'Neill Forebay on behalf of EWA shall be instantaneously released to the Projects to the extent of the unpaid debt, or as payment for a concurrent fish action.
- All uncommitted EWA assets will be conveyed to and stored in San Luis Reservoir following delivery to O'Neill Forebay unless the Management Agencies specifically request that they be stored elsewhere.
- Interagency memoranda documenting the release will follow and need not be in place at the time of the release.

G. Incidental Take Associated with Acquisition and Use of EWA Assets

1) Article II. Section 4. The EWA Shall Be Responsible For Mitigating Its Water Quality, Water Rights, and Environmental Impacts As Required By Law

Whenever an EWA asset is acquired, stored or moved under a project water right the existing regulatory actions will be utilized. This includes the incidental take statements under the existing biological opinions.

H. Losses – Carriage, Conveyance and Storage

Operational losses (which include carriage, conveyance, and storage) reduce the quantity of purchased water delivered from the seller to the buyer's point of delivery. When EWA actions are taken, losses are either avoided (by a curtailment) or occur along the system (moving water into storage), and must be accounted for to ensure that there was no net loss or net gain of water to the Projects.

SWP operational losses are determined as follows:

- Carriage losses – are those losses associated with the movement of water from upstream sources through the Delta to the export facilities, depending upon the water quality in the Delta. Modeling is performed in order to determine what the corresponding carriage water losses should be for water transfers.
- Conveyance losses – are those losses (which include seepage and evaporation) associated with the movement of water within the aqueduct system. An annual percentage of loss for each Reach was calculated, for the years 1991 to 1998, as the total annual Reach loss divided by the total annual Reach conveyance³. The average of the annual percentage for this eight-year period is used in charging

³ This time period includes four Critical and four Wet/Above Normal years to represent the potential variance under varying hydrology. The average annual reach loss is considered to accurately reflect potential losses during EWA operations.

and crediting conveyance losses to EWA operations. Because total annual conveyances and losses are used for this calculation, all actions are charged or credited at the same rate regardless of when they occur. Losses are charged or credited only for those reaches and facilities of the aqueduct system affected by the EWA operation.

- Storage losses – are those losses associated with water stored in reservoirs or groundwater banks. Losses are assessed on the EWA water stored in reservoirs based upon daily evaporation as a percentage of total water storage. The total evaporation loss for an EWA asset is the accumulation of the daily evaporation (based upon the percentage of EWA water each day) for the duration that EWA asset is stored in the facility. Water stored in groundwater banks also has associated losses that vary by facility and quantity of water placed and/or recovered in each facility. These are assessed as a condition of the storage contract for each facility. The assets that are released immediately to the affected Project as payment for an operational curtailment do not accrue storage losses.

I. Operation of the Delta Cross Channel Gates Between November and January

1) Article II. Section 2.b.v. Cross Channel Gate Closure

Delta Cross Channel Gates will be operated pursuant Article II. Section 2.b.v. of the Operating Principles. This section states, “Impacts on project deliveries of any closure of the Delta Cross Channel Gates pursuant to State Water Resources Control Board (SWRCB) Decision D-1641 or any future decision implementing those objectives in the SWRCB’s 1995 Water Quality Control Plan allowing for discretionary Gate closure for fishery purposes shall be attributed to the Regulatory Baseline. Recognizing potential conflicts that may arise during dry conditions, the Project Agencies and the Management Agencies will ensure full consideration of all appropriate factors required for a decision based on the then-available best scientific data and evaluation, particularly including water supply, water quality, and endangered species as wells as tradeoffs. The EWA shall compensate the Projects pursuant to these principles when the Management Agencies advise Reclamation to close the Gates for a time outside such regulatory baseline conditions and such closure leads to export reductions.” The WOMT process will be used to ensure the full consideration of all appropriate factors identified above.

J. Definition of Functional Equivalent

1) Article I. Section 2.f. One-Time Acquisition of Stored Water Equivalent

This section of the Operating Principles provides that actions to protect fish may be taken to the degree the EWA has assets to cover such water expenditures. As a means of providing collateral for such actions, the Operating Principles provided that

200 TAF of stored water (or its functional equivalent) would be provided for the EWA. During the first year of operation, insufficient funds were available to acquire 200 TAF of storage space that would be available to the EWA. Therefore, the Project Agencies will allow borrowing that is functionally equivalent to this EWA asset and its prudent recharge as set forth below.

In any given year, up to 100 TAF may be borrowed against the subsequent year EWA assets provided the following:

1. The borrowed assets are paid back to the Projects. This occurs when (1) operational assets are used to pay back the debt as they accrue during the next year, or (2) hydrology is sufficient to allow San Luis Reservoir to be filled to the level it would have been absent EWA actions that required borrowing.
2. The borrowed assets may be carried over into a subsequent year beyond 2004 if the Project Agencies determine such action (1) will not impact CVP/SWP allocations in 2005 or (2) the EWA can provide sufficient source shifting to avoid impacting storage in San Luis Reservoir at its low point in 2005.
3. Sufficient funding must be provided to acquire the necessary purchased assets for 2004 plus additional water to repay the amount borrowed. If funding is insufficient to acquire the necessary assets and repay debt, and it is not possible to carryover the debt to 2005, the Project Agencies and Management Agencies will meet to consider alternative repayment options. The objective for both the Project and Management Agencies is to ensure continued EWA operations.